

Amphitheater Public Schools Copper Creek Elementary School MPR Roof Replacement BG Project No: 17.14.72

ADDENDUM 1 – Date: January 27, 2022

This revision shall amend the construction documents and shall become part of the contract. All requirements contained in the original construction documents shall apply to this revision, and the general character of the work called for in this revision shall be the same as originally set forth in applicable portions of the original documents for similar work, unless otherwise specified herein. All work shall be performed as specified in the original documents, even if not particularly mentioned in this revision.

DOCUMENTS ISSUED:

Attachment #1 – Sheet A2.1

Attachment #2 - Section 073216 – Concrete Roof Tiles

SPECIFICATIONS:

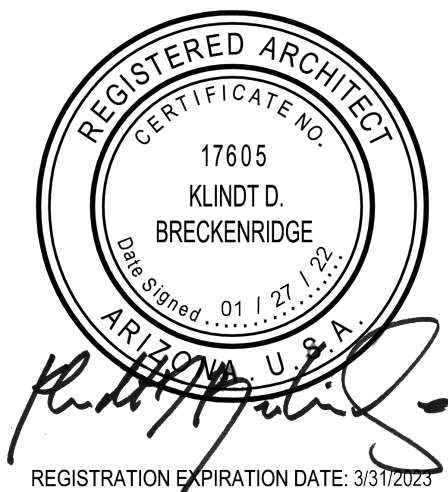
1. Delete Section 073200 - Roof Tiles,
2. Add Section 073216 – Concrete Roof Tiles

DRAWINGS:

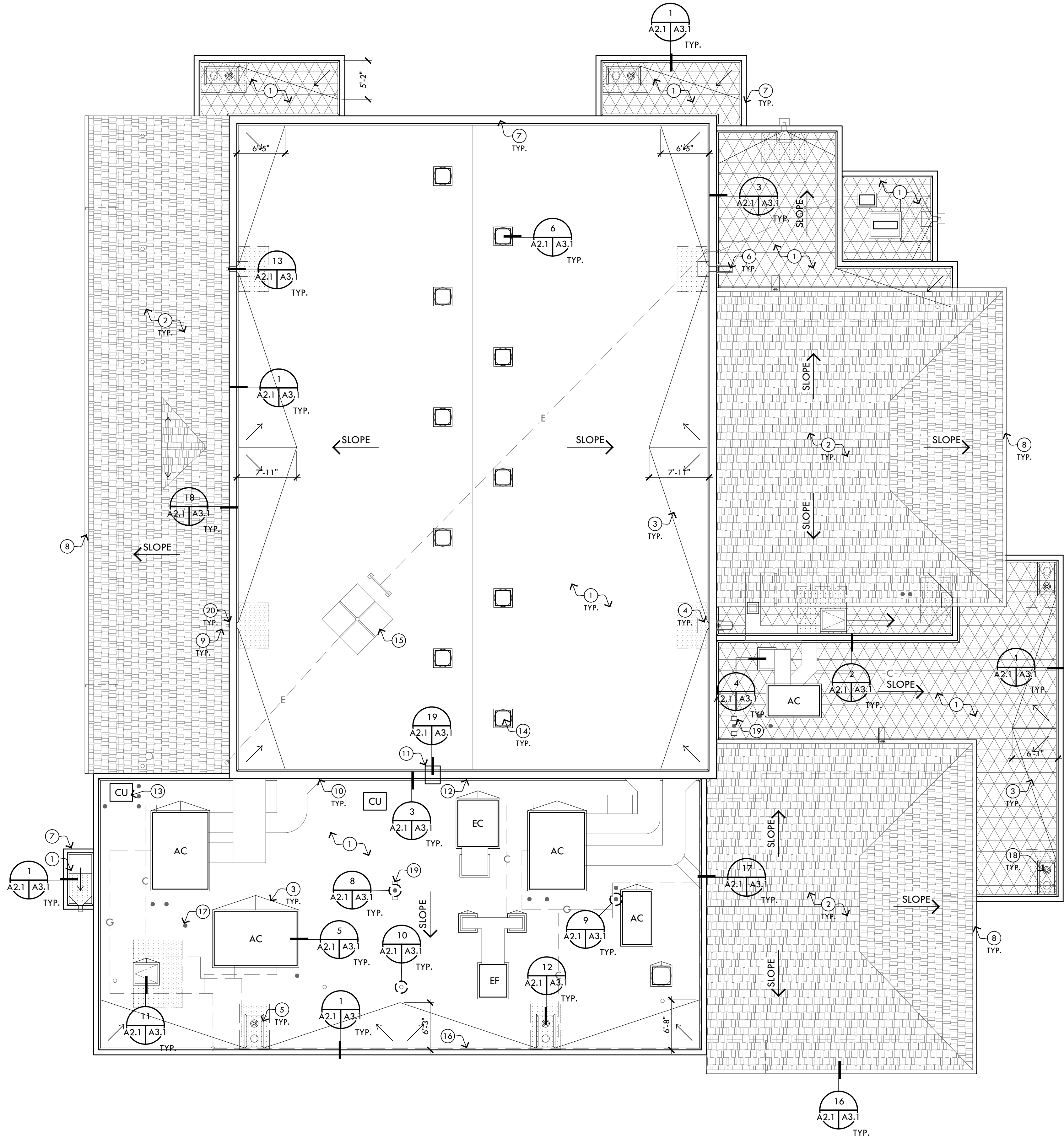
1. Sheet A2.1– Delta No.1

GENERAL COMMENTS / CLARIFICATIONS:

1. N/A



END OF ADDENDUM #2



Construction General Notes

1. CONTRACTOR SHALL TAPE CHARCOAL FILTER ROLLS OVER AIR INTAKES AND SHUT OFF FRESH AIR INTAKES ON HVAC UNITS DURING ROOFING INSTALLATION.
2. PROVIDE CONDUIT WITH WEATHERHEAD AT CABLE PENETRATIONS AND LIQUID FLASH.
3. REMOVE ALL WOOD AND PVC BLOCKS SUPPORTING DUCTWORK AND PIPING/CONDUIT. ALL DUCTWORK AND PIPING/CONDUIT ON ROOF SHALL BE SUPPORTED USING FACTORY FABRICATED ASSEMBLIES OF SOLID BASE POLYCARBONATE, HIGH DENSITY POLYPROPYLENE PLASTIC, RECYCLED TIRE RUBBER, OR GALVANIZED OR STAINLESS STEEL. SUPPORT ASSEMBLIES SHALL BE VERTICALLY ADJUSTABLE TO ACCOMMODATE SLOPE AND REQUIREMENTS OF THE PROJECT. COORDINATE WITH MANUFACTURER'S REPRESENTATIVE FOR SELECTIONS. FIELD VERIFY PIPING MATERIALS, SIZES, DUTY, LOCATIONS, AND ROOF TYPE. PROVIDE LOOSE-FITTING PIPE CLAMPS AT EACH PIPE SUPPORT; CLAMPS SHALL NOT RESTRICT MOVEMENT OF PIPING. APPROVED MANUFACTURERS: C-PORT/MIFAB (MIFAB.COM), MAPA (MAPAPRODUCTS.COM), MIRO (MIROIND.COM), PHP (PHPSD.COM). PROVIDE SLIP SHEET UNDER ALL EXISTING AND NEW SUPPORTS. EXTEND SLIP SHEET 1/2" BEYOND SUPPORTS.
4. REMOVE ALL PLASTIC CONDENSATE DRAIN PIPING. ALL CONDENSATE DRAIN PIPING ON ROOF SHALL BE TYPE 'M' HARD DRAWN COPPER WITH WROUGHT COPPER FITTINGS. AT CONNECTION TO EACH UNIT PROVIDE DIELECTRIC UNION, TRAP, AND OPEN BREATHER TEE ON DISCHARGE SIDE OF TRAP. SLOPE DRAIN PIPING MIN. 1/4" PER FOOT TO APPROVED DRAINAGE LOCATION. PAINT WHITE.
5. REMOVE ALL PLASTIC ROOF DRAIN DOMES AND PROVIDE CAST IRON ROOF DRAIN DOMES AT ALL ROOF DRAINS AND OVERFLOWS.
6. TEST ALL ROOF DRAINS AND DOWNSPOUTS FOR CLOGS PRIOR TO JOB START. CONTRACTOR SHALL BE RESPONSIBLE FOR ALL ROOF DRAINS AND DOWNSPOUTS TO BE IN WORKING CONDITION UPON PROJECT COMPLETION, AND PRIOR TO FINAL INSPECTION.
7. FLOOD COAT A 4-FOOT BY 6-FOOT AREA AROUND ALL DRAINS AND SCUPPERS AND A 3-FOOT WIDE AREA AROUND ROOF HATCHES AS RECOMMENDED BY ROOFING MANUFACTURER. FLOOD COAT BIRD BATH AREAS IF DISCOVERED.
8. PROVIDE SLIP SHEET UNDER ALL (E) AND NEW SPLASH BLOCKS.
9. RAISE (E) CONDUIT/PIPE PENETRATIONS AS REQUIRED SO THAT 8" MIN. FLASHING ABOVE ROOF IS PROVIDED. CONTRACTOR SHALL FIELD VERIFY ALL CONDITIONS.

Construction Keynotes

- (1) ROOFING ON COVER BOARD ON ROOF INSULATION.
- (2) REINSTALL (E) ROOF TILES ON NEW UNDERLAYMENT. REPLACE ALL MISSING, BROKEN, OR DAMAGED TILES.
- (3) TAPERED INSULATION CRICKET - SLOPE 1/2" IN 12" MIN.
- (4) PROVIDE TAPERED EDGE STRIP LAST 1'-0" AROUND SCUPPERS.
- (5) PROVIDE TAPERED INSULATION SUMP AT (E) ROOF DRAIN.
- (6) PROVIDE 12"x24" CONC. SPLASH BLOCK W/ SLIP SHEET AT (E) DOWNSPOUT.
- (7) PARAPET COPING CAP.
- (8) GUTTER.
- (9) CUT 4" DIA. OVERFLOW IN (E) CONDUCTOR HEAD.
- (10) SEAL (E) DUCT WALL PENETRATION.
- (11) REPLACE ROOF LADDER - PAINT.
- (12) COAT (E) HIGH WALL ABOVE ROOF W/ ELASTOMERIC COATING.
- (13) REMOVE WOOD SUPPORTS UNDER (E) CONDENSING UNIT AND PROVIDE COMPOSITE SUPPORTS W/ SLIP SHEET.
- (14) PROVIDE LOREN COOK MODEL 'PR' GRAVITY VENT ON NEW ROOF CURB TO ALLOW FOR PROPER FLASHING. MATCH (E) FREE OPEN AREA.
- (15) COORDINATE W/ OWNER TO TEMPORARILY RELOCATE (E) ANTENNA AND CONDUIT TO FACILITATE ROOF REPLACEMENT.
- (16) RELOCATE (E) WALL MOUNTED GAS PIPING TO ROOF AND PROVIDE ROLLER SUPPORTS W/ SLIP SHEET @ 8'-0" O.C. MAX. COORDINATE WORK W/ OWNER.
- (17) REMOVE (E) HOSE BIB AND PROVIDE WOODFORD MODEL 'RHY2-MS' ROOF HYDRANT.
- (18) PROVIDE OVERFLOW ROOF DRAIN WITH GALVANIZED MTL. STRAINER.
- (19) REPLACE (E) ELECTRICAL STAND W/ 1" DIAMETER STEEL PIPE SUPPORTS.
- (20) REMOVE & REINSTALL CONDUCTOR HEAD TO ENSURE PROPER SEAL AT BOTTOM OF PARAPET SCUPPER. SEAL CONDUCTOR HEAD TO WALL.

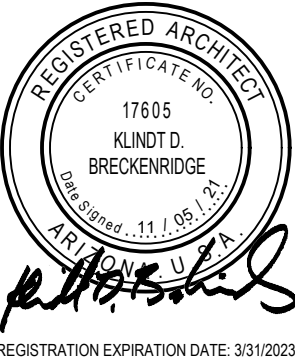
Symbol Legend

- o PLUMBING STACK
- CONDUIT/PIPE PENETRATION
- EXHAUST
- ⊠ PASSIVE VENT/AIR INTAKE
- AC AIR CONDITIONING UNIT
- EC EVAPORATIVE COOLER
- CU CONDENSING UNIT
- ▨ FLOOD COAT
- ⊞ SELF-ADHERING MEMBRANE ROOFING
- ROOF MOUNTED CONDUIT/PIPING

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Copper Creek Elementary School
MPR Roof Replacement
SFB Project No.: BRG-DSGN-00357



PROJECT NO:
17.14.72

DATE:
OCTOBER 2021

REVISION SCHEDULE		
#	DATE	DESCRIPTION
1	01/27/22	PRE BID WALK CHANGES

DRAWN BY: SC
CHECKED BY: KDB

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Roof Plan

A2.1

**SECTION 073216
CONCRETE ROOF TILES**

PART 1 - GENERAL

1.1 SUMMARY

- A. Section Includes:
1. Concrete roof tiles.
 2. Underlayment materials.
 3. Metal flashing and trim.

1.2 PREINSTALLATION MEETINGS

- A. Preinstallation Roofing Conference: Conduct conference at Project site.

1.3 ACTION SUBMITTALS

- A. Product Data: For the following:
1. Concrete roof tiles.
 2. Underlayment materials.
- B. Samples: For each exposed product and for each color and texture specified.

1.4 INFORMATIONAL SUBMITTALS

- A. Sample warranty.

1.5 MANUFACTURER'S INSPECTIONS

- A. When the project is in progress, the roofing system manufacturer will provide the following:
1. Report progress and quality of the work as observed.
 2. Provide periodic job site inspections at least 3 days per week followed by emailed photo reports documenting the inspection on those days.
 3. Report to the Owner and Architect in writing any failure or refusal of the Contractor to correct unacceptable practices called to the Contractor's attention.
 4. Confirm after completion that manufacturer has observed no applications procedures in conflict with the specifications other than those that may have been previously reported and corrected.

1.6 DELIVERY, STORAGE, AND HANDLING

- A. Deliver roofing materials to Project site in original containers with seals unbroken and labeled with manufacturer's name, product brand name and type, date of manufacture, approval or listing agency markings, and directions for storing and mixing with other components.

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CONCRETE ROOF TILES**

- B. Store liquid materials in their original undamaged containers in a clean, dry, protected location and within the temperature range required by roofing system manufacturer. Protect stored liquid material from direct sunlight.
 - 1. Discard and legally dispose of liquid material that cannot be applied within its stated shelf life.
- C. Handle and store roofing materials, and place equipment in a manner to avoid permanent deflection of deck.

1.7 FIELD CONDITIONS

- A. Weather Limitations: Proceed with installation only when existing and forecasted weather conditions permit roofing system to be installed according to manufacturer's written instructions and warranty requirements.
- B. Do not apply roofing materials or membrane to damp deck surface.
- C. Do not expose materials vulnerable to water or sun damage in quantities greater than can be weatherproofed during same day.

1.8 WARRANTY

- A. Manufacturer's Warranty: Underlayment manufacturer must warranty the roof not to leak for 20 years. This must be a labor and materials warranty, be non-prorated, and include the removal of any tiles as needed to correct any leaks.
- B. Contractor will warranty that roof section will be free from faults and defects in new tile materials and workmanship and also not leak for five (5) years. Contractor will provide labor and materials to correct any leak within 48 hours. Contractor will provide copy of this warranty to underlayment manufacturer.
- C. Underlayment and low slope roofing membranes shall be from one manufacturer under one NDL warranty.

PART 2 - PRODUCTS

2.1 CONCRETE ROOF TILES

- A. Concrete Roof Tiles: ASTM C1492, molded- or extruded-concrete roof tile units of shape and configuration to match existing, with integral color, and free of surface imperfections. Provide with fastening holes prepunched at factory.
 - 1. Weight: Normal.
 - 2. Profile: Match existing.
 - 3. Size: Match existing.
 - 4. Finish and texture: Match existing.
 - 5. Colors, Blends, and Patterns: Match existing.

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CONCRETE ROOF TILES**

2.2 UNDERLAYMENT MATERIALS

- A. Self-Adhering, Polymer-Modified Bitumen Sheet, High Temperature: ASTM D1970/D1970M, minimum 75-mil thick sheet; polymer-modified asphalt; with slip-resistant polyester felt top surface and release backing; cold applied; and recommended in writing by manufacturer for use in tile roofing system required. Provide primer for adjoining concrete, masonry, and metal surfaces to receive underlayment.
 - 1. Thermal Stability: Stable after testing at 240 deg F according to ASTM D 1970/D 1970M.
 - 2. Top Surface: Polyester Felt

2.3 ACCESSORIES

- A. Asphalt Primer: ASTM D 41.
- B. Asphalt Roofing Cement: ASTM D 4586/D 4586M, Type II, asbestos free.
- C. Mortar: ASTM C 270, Type M, with ASTM C 979/C 979M, pigmented mortar matching the color of concrete roof tiles for exposed-to-view mortar, and natural color for concealed-from-view mortar.
- D. Eave Closure: Match existing.
- E. Ridge Closure: Match existing.
- F. Wood Nailers: Comply with requirements for pressure-preservative-treated wood in Section 061053 "Miscellaneous Rough Carpentry."

2.4 FASTENERS

- A. Roofing Nails: ASTM F 1667, hot-dip galvanized-steel, 0.120-inch-diameter shank, sharp-pointed, conventional roofing nails with barbed shanks; minimum 3/8-inch-diameter head; of sufficient length to penetrate 3/4 inch into substrate or extend 1/8 inch through thickness of the sheathing, whichever is less.
 - 1. Where nails are in contact with metal flashing, use nails made from same metal as flashing.
- B. Nails for Wood Nailers: ASTM F1667; common or box, steel wire, flat head, and smooth shank.

2.5 METAL FLASHING AND TRIM

- A. General: Comply with requirements in Section 076200 "Sheet Metal Flashing and Trim."
- B. Fabricate sheet metal flashing and trim to comply with recommendations in SMACNA's "Architectural Sheet Metal Manual" for design, dimensions, metal, and other characteristics of the item.
- C. Vent-Pipe Flashings: ASTM B749, Type L51121, at least 1/16 inch thick. Provide lead sleeve sized to slip over and turn down into pipe, soldered to skirt at slope of roof and extending at least 4 inches from pipe onto roof.

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CONCRETE ROOF TILES**

PART 3 - EXECUTION

3.1 PREPARATION

- A. Clean substrate of dust, debris, moisture, and other substances detrimental to roofing installation according to roofing system manufacturer's written instructions. Remove sharp projections.

3.2 INSTALLATION, GENERAL

- A. Comply with roofing underlayment system manufacturer's written instructions.
- B. Substrate-Joint Penetrations: Prevent roofing asphalt and adhesives from penetrating substrate joints, entering building, or damaging roofing system components or adjacent building construction.

3.3 INSTALLATION OF UNDERLAYMENT MATERIALS

- A. Comply with concrete-roof-tile and underlayment manufacturers' written installation instructions and with recommendations in NRCA's "The NRCA Roofing Manual: Steep-Slope Roof Systems" applicable to products and applications indicated unless more stringent requirements are specified in this Section or indicated on Drawings.
- B. Self-Adhering, Polymer-Modified Bitumen Sheet: Install, wrinkle free.
 - 1. Comply with low-temperature installation restrictions of underlayment manufacturer.
 - 2. Install lapped in direction that sheds water.
 - 3. Lap sides not less than 4 inches.
 - 4. Lap ends not less than 6 inches, staggered 24 inches between succeeding courses.
 - 5. Roll laps with roller.
 - 6. Prime concrete, masonry, and metal surfaces to receive self-adhering, polymer-modified bitumen sheet.
 - 7. Single-Layer Installation: Install over entire roof deck.
 - 8. Cover underlayment within seven days.

3.4 INSTALLATION OF METAL FLASHING AND TRIM

- A. Install metal flashings and other sheet metal to comply with requirements in Section 076200 "Sheet Metal Flashing and Trim."
 - 1. Install metal flashings in accordance with concrete-roof-tile manufacturer's written instructions and recommendations in NRCA's "The NRCA Roofing Manual: Steep-Slope Roof Systems."
- B. Pipe Flashings: Form flashing around pipe penetrations and tile roofing. Fasten and seal to tile roofing.

3.5 INSTALLATION OF WOOD NAILERS

- A. Install wood nailers securely fastened to roof deck at the following locations:

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CONCRETE ROOF TILES

1. Hips.
2. Ridges.
3. Rakes.

- B. Install beveled wood cant at eaves and securely fasten to roof deck.
- C. Install nominal 1-by-2-inch wood-batten nailers horizontally in 48-inch lengths with ends separated by 1/2 inch, at spacing required by concrete-roof-tile manufacturer, and securely fasten to roof deck.

3.6 INSTALLATION OF CONCRETE ROOF TILES

- A. Install concrete roof tiles in accordance with manufacturer's written instructions and recommendations in TRI/WSRCA's "Concrete and Clay Roof Tile Installation Manual" and NRCA's "The NRCA Roofing Manual: Steep-Slope Roof Systems" unless more stringent requirements are specified in this Section or indicated on Drawings.
1. Install tiles to resist wind forces resulting from design wind speeds indicated on Drawings.
 2. Maintain uniform exposure and coursing of concrete roof tiles throughout roof.
 3. Extend tiles 2 inches over eave fasciae.
 4. Nail Fastening: Drive nails to clear the concrete roof tile so the tile hangs from the nail and is not drawn up.
 - a. Install wire through nail holes of cut tiles that cannot be nailed directly to roof deck, and fasten to nails driven into deck.
 5. Mortar Setting: Install concrete roof tiles in accordance with manufacturer's written instructions and acceptance criteria of authorities having jurisdiction.
 6. Tile Locks: Install to support and lock overlying tile butts to underlying tiles.
 7. Cut and fit concrete roof tiles neatly around roof vents, pipes, ventilators, and other projections through roof. Fill voids with mortar.
 8. Install concrete roof tiles with color blend to match existing.
- A. Medium-Profile, Interlocking Concrete-Roof-Tile Installation:
1. Provide minimum 3-inch lap between succeeding courses of concrete roof tiles.
 2. Install rake tiles indicated.
 3. Install ridge tiles with laps facing away from prevailing wind. Seal laps with asphalt roofing cement.

3.7 FIELD QUALITY CONTROL

- A. Inspection: Provide manufacturer's field observations three days per week.
1. Warranty shall be issued upon manufacturer's acceptance of the installation.
 2. Field observations shall be performed by a Technical Representative employed full-time by the manufacturer and whose primary job description is to assist, inspect and approve membrane installations for the manufacturer.
 3. Provide observation reports from the Technical Representative indicating procedures followed, weather conditions and any discrepancies found during inspection.
 4. Provide a final report from the Technical Representative, certifying that the roofing system has been satisfactorily installed according to the project specifications, approved details and good general roofing practice.

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CONCRETE ROOF TILES

- B. Final Roof Inspection: Arrange for roofing system manufacturer's technical personnel to inspect roofing installation on completion.
 - 1. Notify Architect and Owner 48 hours in advance of date and time of inspection.
 - 2. Walk roof surface areas of the building, inspect perimeter building edges as well as flashing of roof penetrations, walls, curbs and other equipment. List all items requiring correction or completion and furnish copy of list to each party in attendance.
 - 3. Repair or replace deteriorated or defective work found at time above inspection as required to produce an installation which is free of damage and deterioration at time of Substantial Completion and according to warranty requirements.
 - 4. Notify the Owner and Architect upon completion of corrections.
 - 5. Following the final inspection, provide written notice of acceptance of the installation from the roofing system manufacturer.
- C. Roofing system will be considered defective if it does not pass inspections.
 - 1. Additional inspecting, at Contractor's expense, will be performed to determine if replaced or additional work complies with specified requirements.

3.8 PROTECTING AND CLEANING

- A. Protect roofing system from damage and wear during remainder of construction period.
 - 1. When remaining construction does not affect or endanger roofing, inspect roofing for deterioration and damage, describing its nature and extent in a written report, with copies to Architect and Owner.
- B. Correct deficiencies in or remove roofing system that does not comply with requirements, repair substrates, and repair or reinstall roofing system to a condition free of damage and deterioration at time of Substantial Completion and according to warranty requirements.
- C. Clean overspray and spillage from adjacent construction using cleaning agents and procedures recommended by manufacturer of affected construction.

END OF SECTION